

# Breasts, Hair and Hormones: The Anatomy of Gender Difference in Spain, 1880–1940

RICHARD CLEMINSON AND FRANCISCO VÁZQUEZ GARCÍA

*University of Leeds*

*Universidad de Cádiz*

The last twenty years of work on gender in the Spanish context have seen a shift from mapping women's experience in the labour force, female literary work and gender inequalities in the past and present to an analysis that seeks to examine how gender differences were embodied and lived out in active subjects. In tune with broader developments in feminist history, sociological and historical analysis of the body and a focus on the way in which material differences between the sexes were articulated in other countries, gender studies in Hispanism have embraced new theoretical frameworks and new subjects of examination. In addition to tracing the ways in which textual, legal and social differences on the basis of sex and gender were articulated and fortified in Spanish society,<sup>1</sup> recent research has focused on how supposed biological differences were made to matter in the construction of the liberal project of equal rights,<sup>2</sup> and in the construction of

---

1 Giuliana Di Febo, "‘Nuevo Estado’, nacionalcatolicismo y género", in *Mujeres y hombres en la España franquista. Sociedad, economía, política, cultura*, ed. Gloria Niefra Cristóbal (Madrid: Editorial Complutense, 2003), 19–44; "‘La Cuna, la Cruz y la Bandera’. Primer franquismo y modelos de género", in *Historia de las mujeres en España y América Latina*. IV. *Del siglo XX a los umbrales del XXI*, ed. I. Morant (Madrid: Cátedra, 2006), 217–18.

2 An early analysis was Giuliana Di Febo, 'Orígenes del debate feminista en España. La escuela krausista y la Institución Libre de Enseñanza (1870–1890)', *Sistema*, 12 (1976), 49–82. See also Susan Kirkpatrick, 'Spanish Liberalism and the Romantic Subject', in *Las Románticas: Women Writers and Subjectivity in Spain, 1835–1850* (Berkeley/Los Angeles/London: Univ. of California Press, 1989), 37–61; Bridget Aldaraca, *El ángel del hogar. Galdós and the Ideology of Domesticity in Spain* (Chapel Hill: Dept of Romance Languages, Univ. of North Carolina/Valencia: Artes Gráficas Soler, 1991); Catherine Jagoe, *Ambiguous Angels: Gender in the Novels of Galdós* (Berkeley/Los Angeles/London: Univ. of California Press, 1994); Jo Labanyi, *Gender and Modernization in the Spanish Realist novel* (Oxford: Oxford U. P., 2000).

scientific discourse and the application of medicine.<sup>3</sup> This turn towards the material, however, sometimes perpetuates the 'reality' of difference between men and women, rather than analysing how two separate spheres were awarded biological and social significance in the first place. Furthermore, emphasis on these accounts often focuses primarily on women's bodies alone. Much of the work on gender in the Spanish context mentions men, maleness and masculinity only in passing or not at all.<sup>4</sup> For a feminist or gender analysis to be anywhere near complete or satisfactory it is necessary to focus on both the gender and sexual categories of men *and* women.<sup>5</sup>

This study seeks to make a contribution towards the analysis of the materiality—in terms of the body and its functions—of gendered and sexed difference as constructed by some Spanish scientists in the late nineteenth

3 Teresa Ortiz, 'El discurso médico sobre las mujeres en la España del primer tercio del siglo veinte', in *Las mujeres en Andalucía. Actas del 2º encuentro interdisciplinar de estudios de la mujer en Andalucía*, ed. M. T. López Beltrán (Málaga: Diputación Provincial de Málaga, 1993), I, 107–38; Catherine Jagoe, 'Sexo y género en la medicina del siglo XIX', in Catherine Jagoe, Alda Blanco & Cristina Enríquez de Salamanca, *La mujer en los discursos de género. Textos y contextos en el siglo XIX* (Barcelona: Icaria, 1998), 305–67; Nerea Aresti, *Médicos, donjuanes y mujeres modernas. Los ideales de feminidad y masculinidad en el primer tercio del siglo XX* (Bilbao: Univ. del País Vasco/Euskal Herriko Unibertsitatea, 2001); Teresa Ortiz Gómez, *Medicina, historia y género. 130 años de investigación feminista* (Oviedo: KRK Ediciones, 2006).

4 An exception in this sense is Aresti, *Médicos, donjuanes y mujeres modernas*, 137–43, where the author focuses on the relations between masculinity, values, productivity, gender and work in the first third of the twentieth century. Previously, we have analysed how a weakened, threatened or broken masculinity was related to certain political and racial or biological traits of the Spanish nation in Richard Cleminson and Francisco Vázquez García, '“In Search of Men”: Regeneracionismo and the Crisis of Masculinity (1898–1936)', in *Los Invisibles: A History of Male Homosexuality in Spain, 1850–1940* (Cardiff: Univ. of Wales Press, 2007), 175–215. Outside of the chronological framework of this article, Michael Richards, *A Time of Silence: Civil War and the Culture of Repression in Franco's Spain, 1936–1945* (Cambridge: Cambridge U. P., 1998); Mary Vincent, 'The Martyrs and Saints: Masculinity and the Construction of the Francoist Crusade', *History Workshop Journal*, 47 (1999), 68–98 and 'La reafirmación de la masculinidad en la cruzada franquista', *Cuadernos de Historia Contemporánea*, 28 (2006), 135–51; and, Brian D. Bunk, 'Grandsons of the Cid: Masculinity, Sexual Violence, and the Destruction of the Family', in *Ghosts of Passion: Martyrdom, Gender, and the Origins of the Spanish Civil War* (Durham, NC/London: Duke U. P., 2007), 88–119, have discussed masculinity with respect to Francoism.

5 Will Fisher, in 'The Renaissance Beard: Masculinity in Early Modern England', *Renaissance Quarterly*, 54 (2001), 155–87, has pointed out 'as Katherine Park and Robert Nye have recently suggested, there is a tendency within current scholarship to concentrate primarily on the female body and the ways in which female physiology was understood and materialized' (184). He refers to Katherine Park & Robert A. Nye, 'Destiny Is Anatomy', *The New Republic*, 18 February 1991, 53–57 (p. 56).

and early twentieth centuries.<sup>6</sup> It does not take those gendered or sex differences as given, as scientists often (but not always) did, but follows a number of scientific routes whereby these differences were articulated, awarded materiality and thus social significance. In this way, emphasis here is placed on the processes, both discursive and material, whereby sex difference was articulated. In order to illustrate how bodies were literally constructed with a view to founding sex differences in biology and, by implication and application in society,<sup>7</sup> three ‘parts’ of the body are studied with respect to medical publications of the period.<sup>8</sup> These three parts are the breasts, the hair and the hormones. Specialists examined minutely differences between men in women with respect to these three attributes and attempted to measure sex differences on the basis of the relative development of each in the sexes and their relative differentiation according to sex. It was only by means of this minute operation that an overall language of difference could be articulated. But this dichotomized world was not a stable one; doctors had to introduce and accept slippages between supposedly distinct gendered worlds and constantly had to shore up their ideas by having recourse to exceptions, unusual cases, pathologies and, at the end of the day, the acceptance that some supposed differences were actually shared by the sexes.<sup>9</sup>

The background to this search for difference in the late nineteenth and early twentieth centuries was constituted by the numerous fields of the anatomical and biological sciences in Europe generally and in Spain in

---

6 For some recent work on materiality and gender see Jane M. Ussher, ‘Introduction. Towards a Material-Discursive Analysis of Madness, Sexuality and Reproduction’, in *Body Talk: The Material and Discursive Regulation of Sexuality, Madness and Reproduction*, ed. Jane M. Ussher (London/New York: Routledge, 1997), 1–9, and Roberta Gilchrist, *Gender and Material Culture: The Archaeology of Religious Women* (London: Routledge, 1994).

7 As Bryan S. Turner in *Regulating Bodies: Essays in Medical Sociology* (London/New York: Routledge, 1992) suggests, the ‘use’ of the body and the activities undertaken by it ‘require an organic foundation, but the elaboration of these potentialities requires a cultural context’ (36).

8 The reliance on the analysis of parts of the body and their relation to the whole draws to some degree on the notion of the ‘fragmented’ body, as articulated in *Fragments for a History of the Human Body*, ed. Michel Feher, Ramona Naddaff and Nadia Tazi, 3 vols (New York: Zone, 1989), and *Incorporations*, ed. Jonathan Crary and Sanford Kwinter (New York: Zone, 1992). An early analysis of the different types of bodily activity and the influence of the ‘habitus’, defined as collective habits and customs, to describe body practices is contained in Marcel Mauss, ‘Techniques of the Body’ [1934], in *Incorporations*, ed. Crary and Kwinter, 455–77. From an ‘interdisciplinary’ sociological approach to the ‘culture somatique’ of the body in medicine, food and sport see Luc Boltanski, ‘Les Usages sociaux du corps’, *Annales: Économies, Sociétés, Civilisations*, 26 (1971), 205–33.

9 See Georges Canguilhem, *The Normal and the Pathological*, trans. Carolyn R. Fawcett (New York: Zone, 1989).

particular.<sup>10</sup> In the context of a form of liberalism that was undergoing consolidation, doctors and specialists had to refer constantly to broad preconceptions of sexual difference in order to make their laboratory or clinical findings coincide with 'reality' within the framework of an early expression of 'equality through difference'. In doing so, theoretical understandings of sexual differences were not stagnant; they altered in accordance with new knowledge in a process of construction whereby, as we shall see, the material reality of what doctors saw had to be constantly reconsidered in order to make it fit comfortably with *a priori* sexualized differences.

### 'The Substance of Sexual Difference'

Karen Harvey has analysed how gender, the body and science interfaced in England in the 'long eighteenth century' and has focused primarily on how differences between the sexes were articulated.<sup>11</sup> In doing so, she assesses critically the claims by Thomas Laqueur that up to the end of the seventeenth century the hitherto dominant explanation of the sexes placed men and women in a relation of continuity and not fundamental biological difference. This 'one-sex' model was a vertical model; men were women 'turned the other way out'; men were hotter and drier than women, but essentially they were biologically similar. This model ceded its place to a 'two-sex' model of sexual incommensurability and dichotomy at the beginning of the eighteenth century. There has been much discussion about the periodization implied by Laqueur's model, the over-emphasis on change and the representative significance of his evidence.<sup>12</sup> Here is not the place to assess Laqueur's claims, but what does appear to be clear is that the science of the nineteenth and twentieth centuries allowed for 'the *ontologising via embodiment* of sex and racial difference'.<sup>13</sup> What is useful

10 Michel Foucault, *The History of Sexuality*, Vol. I, *An Introduction*, trans. Robert Hurley, (Harmondsworth: Penguin, 1990); Francisco Vázquez García and Andrés Moreno Mengíbar, *Sexo y razón. Una genealogía de la moral sexual en España (siglos XVI–XX)* (Madrid: Akal, 1997).

11 See Karen Harvey, 'The Substance of Sexual Difference: Change and Persistence in Representations of the Body in Eighteenth-century England', *Gender and History*, 14 (2002), 202–23. See also her 'The Century of Sex? Gender, Bodies, and Sexuality in the Long Eighteenth Century', *The Historical Journal*, 45 (2002), 899–916.

12 Harvey, 'The Substance of Sexual Difference', 204.

13 Nancy L. Stepan cited in Harvey, 'The Substance of Sexual Difference', 203 (original emphasis). Harvey refers to Nancy Leys Stepan's 'Race, Gender, Science and Citizenship', *Gender and History*, 10 (1998), 26–52 (quotation from p. 29). For some examples of critique of Laqueur, see Park and Nye, 'Destiny Is Anatomy', and Michael Stolberg, 'A Woman Down to Her Bones. The Anatomy of Sexual Difference in the Sixteenth and Early Seventeenth Centuries', *Isis*, 94 (2003), 274–99. See also the responses to Stolberg by Laqueur, 'Sex in the Flesh', *Isis*, 94 (2003), 300–06, and Londa Schiebinger, 'Skeletttestreit', *Isis*, 94 (2003), 307–13.

here, however, is an overview of debates on the subject of the body in feminist theory.

At least since Ann Oakley's *Sex, Gender and Society* and Gayle Rubin's analysis of the 'sex/gender' system,<sup>14</sup> feminist thinkers have argued that the body is not separate from sex, that sex is not separate from gender and that these categories are products of historical human activity rather than 'real' in any transhistorical sense. While these accounts have often seen gender as a socially constructed set of signifiers and behaviours that become attached to the sexes, however, they have tended, at least until recently, to view the sex of the person as something intrinsic and biologically grounded. Gender, as a set of cultural practices, was understood to spring from the sex of the body.

Recent feminist authors, however, coincide in the need to revise some of the claims of 1970s feminism with respect to the body, sex and gender, to reassess the question of biology in society and to address how science and society construct what is accepted as nature and nurture. Nelly Oudshoorn analyses how second-wave feminism (during the 1970s) viewed male and female bodies from a perspective that rejected biological determinism (the position that posits essential differences between men and women in terms of bodies, hormones and psyches and believes that gendered social practices arise from an intrinsic sex-differentiated biological basis), focusing on the social as providing the constraints on (particularly) women's behaviour and abilities.<sup>15</sup> But feminism at this time did not enter into a critique of the notion of the 'natural body' or into an analysis of the power of the bio-medical sciences to proclaim truths about the body. Feminism, including the pioneering work of Ann Oakley, focused instead on the social, following the argument held by Simone de Beauvoir that women are made and not born.<sup>16</sup> This meant that many feminists accepted the distinction between innate biological sex differences and gender attributes acquired by socialization. Such a move effectively allowed feminism to regard the social as its point of research and debate, leaving the biological untouched as a category of reality outside of the social. As Oudshoorn states:

What actually happened was that feminists, by introducing the sex-gender distinction, reproduced the traditional task division between the social sciences and the biomedical sciences. Feminists assigned the study of sex to the domain of the biomedical sciences, and defined the study of

14 Ann Oakley, *Sex, Gender and Society* (London: Temple Smith, 1972); Gayle Rubin, 'The Traffic in Women: Notes on the "Political Economy" of Sex', in *Toward an Anthropology of Women*, ed. Rayna R. Reiter (New York/London: Monthly Review Press, 1975), 157–210.

15 Nelly Oudshoorn, *Beyond the Natural Body: An Archaeology of Sex Hormones* (London/New York: Routledge, 1994), 1–2.

16 'One is not born, but rather becomes, a woman' (Simone de Beauvoir, *The Second Sex*, trans. H. M. Parshley [London: David Campbell Publishers, 1993 (original French ed. 1949)], 281).

gender as the exclusive domain of the social sciences [...] [T]he sex-gender distinction did not challenge the notion of a natural body [...] [T]he concept of sex maintained its status as an ahistorical attribute of the human body and the body remained excluded from feminist analysis.<sup>17</sup>

This argument is reinforced by Lynda Birke.<sup>18</sup> Birke notes: 'The biological body has been peripheral to much feminist theory, at least partly because of that very necessary rebuttal of biological determinism [...] [T]he emphasis in our theory was on the *social* construction of gender; the body hardly featured at all in emerging feminist theory—until recently'.<sup>19</sup> This omission entailed other serious consequences for feminist thought: 'in emphasising social constructionism, in opposing it to biological determinism, we have perpetuated the dualism [between gender and sex and between culture and body]; and have played down the importance of the biological body itself'.<sup>20</sup>

There has, however, since the mid-1980s been a steady revision of the relationship between the social and biological sciences, of the concepts of nature/nurture and of the biological body.<sup>21</sup> Not least, this entailed a revision in feminist thought of the idea that sex and biology in themselves are fixed categories.<sup>22</sup> Schiebinger, for example, now notes that feminism has argued that gender differences are not fixed in the character of the species but 'arise from specific histories and from specific divisions of labour and power between the sexes'.<sup>23</sup> While feminists, Schiebinger continues, have opposed the argument from 'nature' with one from 'nurture' since the seventeenth century, recently two caveats have arisen: first, too strict a demarcation between nature and nurture can obscure how 'nurture' (culture) can form 'nature' (the body). Second, having accepted a strict division between nature and nurture feminists allowed a certain constructivism to prevail that tended to dissolve all body differences into political and cultural artefacts. Recent

17 Oudshoorn, *Beyond the Natural Body*, 2.

18 Lynda Birke, *Feminism and the Biological Body* (Edinburgh: Edinburgh U. P., 1999).

19 Birke, *Feminism and the Biological Body*, 1–2; original emphasis.

20 Birke, *Feminism and the Biological Body*, 25.

21 The literature on the body is now extensive. For a recent view on history and the body, see Mark S. R. Jenner and Bertrand O. Taithe, 'The Historiographical Body', in *Companion to Medicine in the Twentieth Century*, ed. Roger Cooter and John Pickstone (London/New York: Routledge, 2003), 187–200.

22 Bernice Hausman, *Changing Sex: Transsexualism, Technology, and the Idea of Gender* (Durham, NC/London: Duke U. P., 1995), 8–9. Among many examples that can be consulted see Donna J. Haraway, '“Gender” for a Marxist Dictionary: The Sexual Politics of a Word', in her *Simians, Cyborgs, and Women: The Reinvention of Nature* (London: Free Association Books, 1991), 127–48.

23 Londa Schiebinger, *Feminism and the Body* (Oxford: Oxford U. P., 2000), 1.

developments in medicine have shown how nature too needs to be taken seriously with respect to women's health issues, for example.<sup>24</sup>

While the biology of the body, the constructions of nature and nurture and the materiality of the body have all recently come under scrutiny, some feminist biologists are curious that it is still mainly only the surface of the body that has come into social analysis. Although the body's outside appearance can be adorned or physically altered to fit with changing cultural mores, for Birke 'the renewed focus seems always to end at the body's surface [...] Theory it seems, is only skin deep'.<sup>25</sup> Birke proposes to look inside the body at physiological processes and organs in order to understand how western science understood the (gendered) body. What is at stake, Birke argues, is how assumptions about gender 'are read onto nature, including the insides of our bodies'.<sup>26</sup> This need to analyse beyond the surface has led, Birke illustrates, to the attempt to transcend such dichotomies and to introduce more phenomenological approaches emphasising the *lived body*, including the work of Judith Butler, Iris Young and Elizabeth Grosz.<sup>27</sup>

Judith Butler, for her part, critiques the feminist distinction between gender and sex as she understands this dualism as retaining a binarism between male and female, masculinity and femininity, thus reproducing dominant heterosexual social and sexual relations. Gender and sex, according to Butler, arise from performances which need to be reiterated continually in order to retain their unchallenged significance and hegemony in the social scene. Sex and gender are not seen, respectively, as categories that emerge from 'nature' and 'culture'. Rather, our understandings of both arise from our interpretation of nature; indeed, notions of gender, that is, the performance of gendered acts, Butler argues in her *Gender Trouble*, actually

---

24 Schiebinger, *Feminism and the Body*, 2–3. Not forgetting that the body has materiality is discussed from a number of perspectives. From a feminist sociological perspective, see Hilary Rose, 'Gay Brains, Gay Genes and Feminist Science Theory', in *Sexual Cultures: Communities, Values and Intimacy*, ed. Jeffrey Weeks and Janet Holland (Houndmills: Macmillan Press, 1996), 53–72 (especially pp. 64–67). From an analysis of the dangers for social theory and lived experience of losing the body from a social and material perspective in relation to cyberspace, see A. R. Stone, 'Will the Real Body Please Stand Up? Boundary Stories about Virtual Cultures', in *Cyberspace: First Steps*, ed. M. Benedikt (Cambridge, MA: MIT Press, 1992), 81–118.

25 Birke, *Feminism and the Biological Body*, 2.

26 Birke, *Feminism and the Biological Body*, 7.

27 For an existentialist phenomenological approach, see Iris Marion Young, *On Female Body Experience: 'Throwing Like a Girl' and Other Essays* (Oxford: Oxford U. P., 2005). Young relies on Maurice Merleau-Ponty's analysis of the body in his *Phenomenology of Perception*, trans. Colin Smith (London, Routledge, 1962), especially pp. 67–199, and this is most clearly developed in her 'Lived Body vs. Gender: Reflections on Social Structure and Subjectivity', in *On Female Body Experience*, 12–26. For a similar perspective see Elizabeth Grosz, *Volatile Bodies: Toward a Corporeal Feminism* (Bloomington: Indiana U. P., 1994) and for a more discursive approach see Judith Butler, *Bodies That Matter: On the Discursive Limits of 'Sex'* (New York/London: Routledge, 1993).

make up what sex we are.<sup>28</sup> As a result of the critique by some feminists and others that Butler's account viewed bodies and sexual identities as mere responses to discourse, without considering the social structures of society or materiality, Butler responded in her later *Bodies That Matter* that she understood that the materiality of the sexed body is itself socially constituted.<sup>29</sup> She writes:

The category of 'sex' is, from the start, normative; it is what Foucault has called a 'regulatory ideal'. In this sense, then, 'sex' not only functions as a norm, but is part of a regulatory practice that produces the bodies it governs [...] Thus, 'sex' is a regulatory ideal whose materialization is compelled, and this materialization takes place (or fails to take place) through certain highly regulated practices. In other words, 'sex' is an ideal construct which is forcibly materialized through time.<sup>30</sup>

Furthermore, sex, according to Butler, is not a simple fact or a condition of a determined body. Instead, it is a 'process whereby regulatory norms materialize "sex" and achieve this materialization through a forcible reiteration of those norms'.<sup>31</sup> It is also a process that is never 'complete'; it must be reiterated to confirm those norms even though the body fails to 'comply with the norms by which their materialization is impelled'.<sup>32</sup> While Butler theorizes 'performativity' as the means by which sexed bodies, gender and sexuality are constituted socially and materially, some feminist authors remain convinced that gender is still useful as a category of analysis. While 'gender must be undone',<sup>33</sup> deconstructed and exposed as a historical and social construction, Young, for instance, argues that Judith Butler's and Toril Moi's recent accounts, despite their differences, focus more on the constitution of subjectivity and identity and less on social structures and processes of discrimination and oppression.<sup>34</sup> What Young proposes is the use of gender

28 Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (New York/London: Routledge, 1990). Butler's position is not dissimilar to that sustained by some Spanish feminist analysis. The concept of 'discurso genérico o sexuado' (gendered or sexualized discourse) posits an interdependent process of construction of 'gender' and 'sex' as proposed in Amelia Valcárcel, *Sexo y filosofía. Sobre 'mujer' y 'poder'* (Barcelona: Anthropos, 1991) discussed in Iris M. Zavala, 'Las formas y funciones de una teoría crítica feminista. Feminismo dialógico', in *Breve historia feminista de la literatura española (en lengua castellana)*. Vol. I. *Teoría feminista: discursos y diferencia*, ed. Myriam Díaz-Diocaretz & Iris M. Zavala (Barcelona: Anthropos/San Juan: Univ. de Puerto Rico, 1993), 27–76 (p. 35).

29 We follow the account given by Young in *On Female Body Experience*, 14–15.

30 Butler, *Bodies That Matter*, 1.

31 Butler, *Bodies That Matter*, 2.

32 Butler, *Bodies That Matter*, 2.

33 Judith Butler, *Undoing Gender* (New York/London: Routledge, 2004).

34 See Young's argument in 'Lived Body vs. Gender'. Here, she discusses the work of Toril Moi, 'What Is a Woman?', in *What Is a Woman and Other Essays* (Oxford: Oxford U. P., 1999), 3–120.



as a category of analysis which is socially and materially grounded: ‘Gender [...] is best understood as a particular form of the social positioning of lived bodies in relation to one another within historically and socially specific institutions and processes that have material effects on the environment in which people act and reproduce relations of power and privilege among them’.<sup>35</sup> In a similar way, Elizabeth Grosz argues for the analysis of the ‘lived experience’ of the body, by focusing on materiality and subjectivity as processes, thus disrupting the dichotomies that structure social thought.<sup>36</sup> Likewise, Anne Fausto-Sterling argues that sex is constructed by cultural and material practices,<sup>37</sup> which operate in accordance with the dyad of male/female.

This focus on the internal workings of the body in relation to its surface, and the mutual construction of gender and sex will provide the basis for our analysis of doctors’ discussions of breasts, hair and hormones. In these discussions we see the attempt to align ‘satisfactorily’, that is, in accordance with gendered and sexed models of coexistence, the three elements of masculinity/femininity, male/female and sexuality understood as heterosexuality as the natural default.

### Lactating Men and Gynaecomastia

Our first example, taken from a period intent on discerning the material differences between men and women within the context of the anatomical and sexological sciences, discusses the seemingly anomalous phenomenon of the presence and functionality of breasts in men. Lactation and the development of breasts in men (gynaecomastia) were both phenomena remarked upon by early commentators such as Aristotle and, in Spain, appeared from time to time as related to particular ‘racial’ types or pathological forms.<sup>38</sup> We focus here on one extensive study from 1880 and the up-take of this question in the development of theories of ‘intersexuality’ as posited by the Spanish endocrinologist Gregorio Marañón in the 1920s

35 Young, *On Female Body Experience*, 22.

36 Grosz, *Volatile Bodies*, 236–48.

37 Anne Fausto-Sterling, *Sexing the Body: Gender Politics and the Construction of Sexuality* (New York: Basic Books, 2000).

38 See Aristotle, *History of Animals* (cited in Alberto Salamanca Ballesteros, *Monstruos, ostentos y hermafroditas* [Granada: Univ. de Granada, 2007], 294). See, for example, the discussion on lactating men in Fray Antonio de Fuentelapeña, *El ente dilucidado. Tratado de monstruos y fantasmas*, ed. Javier Ruiz (Madrid: Editora Nacional, 1978 [1<sup>st</sup> ed. 1676]), 253. In addition, around 1632, doctors such as the court physician Juan de Quiñones and Gerónimo de la Huarta had no difficulty in affirming that male Jews menstruated periodically just like women. See J. L. Beusterien, ‘Jewish Male Menstruation in Seventeenth-century Spain’, *Bulletin of the History of Medicine*, 73 (1999), 447–56. One way of according infamy to Jews was precisely by attributing to them the category of ‘imperfect males’, that is, women.

and 1930s. The two periods are contrasted in the sense that, in the late nineteenth-century studies of the gynaecologist Ángel Pulido Fernández, gynaecomastia was understood as an unusual but generally non-pathological occurrence in men, while Marañón understood it as evidence of a lack of sexual differentiation between the sexes and as evidence of 'intersexuality'.

Dr Pulido published his ten-part study on lactation in men in the prominent medical journal *Revista de Medicina y Cirugía Prácticas*.<sup>39</sup> While the phenomenon of lactation is obviously dependent on the presence of 'functioning' breasts, here, for questions of space, we focus more precisely on the presence of gynaecomastia as discussed by Pulido, something which may or not imply functionality in terms of lactation. Much of the account given by Pulido focused on the recording and discussion of lactation by men in historical sources, most of which were not Spanish. Despite this, some Spanish cases were referred to and historical instances of men from the late eighteenth century who had suckled children were discussed.<sup>40</sup> This historical overview, and reference to influential medical figures such as Orfila and Tolosa Latour,<sup>41</sup> served to prove that the existence of breasts and lactation was not to be doubted: 'Un ligero trabajo bibliográfico convence á cualquiera de que el desarrollo mamario y la secreción láctea en el hombre son asuntos que no tienen nada de nuevos, y que con más o ménos interes han ocupado á las personas de ciencia desde los más antiguos tiempos'.<sup>42</sup>

Before discussing this further, it is worth pointing out that Pulido, from his perspective as a gynaecologist, was not saying that women and men were essentially the same. The nineteenth century saw an ongoing process of sexual differentiation, in part articulated by the new science of gynaecology. If in the early years of the century the locus of femininity was understood to

39 Ángel Pulido y Fernández, 'Lactancia paterna', *Revista de Medicina y Cirugía Prácticas* [henceforth *RMCP*], VI (1880), 305–16; 363–75; 473–81; 527–38; *RMCP*, VII (1880), 12–22; 55–64. These articles appeared as Ángel Pulido Fernández, *Lactancia paterna (y ginecomastia)* (Madrid: Moya y Plaza, 1880), published by the same publisher of the *RMCP*. We have not been able to consult this work. The ten-part work, Pulido states, formed an address to the Spanish Gynaecological Society of which he was a member. Further details of 'bearded women', lactating men and hermaphrodites are given in Ballesteros, *Monstruos*, 283–312.

40 Pulido, 'Lactancia paterna', *RMCP*, VI, 305–10. In addition, the phenomenon of bearded women who suckled children was sufficiently interesting to merit the attention of the work of José de Ribera, whose painting 'Maddalena Ventura degli Abruzzi con su marido e hijo' (1631) depicts such a phenomenon. On this painting see Ballesteros, *Monstruos*, 293, and Fisher, 'The Renaissance Beard', 170–72.

41 Pulido, 'Lactancia paterna', *RMCP*, VI, 311.

42 Pulido, 'Lactancia paterna', *RMCP*, VI, 312. Original orthography retained in this quotation and henceforth.

be the uterus,<sup>43</sup> later on this had shifted to the ovaries. The ovaries became the object of surgical intervention and the sign of true femaleness. In the early twentieth century, however, the locus of femininity shifted once again and became located at least partly in the hormones, which were secreted by a number of glands.<sup>44</sup> Such a move enabled the delineation of boundaries between obstetrics, focusing on the uterus, and gynaecology focusing on the ovaries.<sup>45</sup> What was needed from the perspective of fundamental sexual difference was an explanation of how *some* men could lactate and experience growth in breasts. The unusual came to consolidate the norm of sexual difference by elucidating what could no longer be ignored or denied historically. The resources to be employed in order to effect this would be broad: ‘la secreción láctea en el hombre es un fenómeno evidente, no sólo porque los autores respetables y serios sostienen haberla observado, sino porque la anatomía, la fisiología, la patología y aún la misma zoología la prestan la autoridad de su apoyo con esos argumentos poderosos é indiscutibles que emanan de los hechos bien establecidos y lógicamente interpretados’.<sup>46</sup> What was at stake here was not just the proof that lactating men existed but the legitimacy of a whole set of new disciplines consolidated in the nineteenth century.

Indeed, most authors, Pulido noted, sustained that males possessed mammary glands although they added that ‘se diferencian de las de la mujer en que se encuentran atrofiadas’. This atrophy, however, did not always obtain. It was not an absolute fact and there were exceptions: frequently ‘salen de las modestas esferas de su estado atrófico, de una evolucion [...] y crecen, y se desenvuelven hasta cobrar dimensiones análogas á las que presentan los pechos de la mujer’.<sup>47</sup> This ‘anomaly’ or even ‘pathological phenomenon’ was described in the literature as ‘gynaeco-mastia’ (woman’s breast).<sup>48</sup> But these were not quite women’s breasts; the language Pulido uses as he discusses cases is one of appearance—in one case the breasts of a

43 See Ornella Moscucci, ‘Hermaphroditism and Sex Difference: The Construction of Gender in Victorian England’, in *Science and Sensibility: Gender and Scientific Enquiry, 1780–1945*, ed. Marina Benjamin (Oxford/Cambridge, MA: Blackwell, 1991), 174–99. See Pedro Felipe Monlau’s comment, ‘En la matriz retumban indefectiblemente todas las afecciones físicas y morales de la mujer: el útero hace que la mujer sea lo que es’ (*Higiene del matrimonio* [1846]), cited in Pura Fernández, ‘Moral social y sexual en el siglo XIX: la reivindicación de la sexualidad femenina en la novela naturalista radical’, in *Breve historia feminista de la literatura española (en lengua castellana)*. Vol. III. *La mujer en la literatura española. Modos de representación desde el siglo XVIII a la actualidad*, ed. Iris M. Zavala (Barcelona: Anthropos/San Juan: Univ. de Puerto Rico, 1996), 81–113 (p. 100).

44 Oudshoorn, *Beyond the Natural Body*, 8.

45 Oudshoorn, *Beyond the Natural Body*, 19.

46 Pulido, ‘Lactancia paterna’, *RMCP*, VI, 316.

47 Both quotations from Pulido, ‘Lactancia paterna’, *RMCP*, VI, 363.

48 Pulido, ‘Lactancia paterna’, *RMCP*, VI, 364.

man 'parecían las de una mujer'; in another, the liquid that came from them was 'parecido á la leche'.<sup>49</sup>

The phenomenon of male breasts was, in addition to being the focus of all the branches of science mentioned above, also relevant to the new science of forensic or medico-legal medicine. This branch of science was called upon to elucidate questions pertaining to legal sanction. One of its remits was the inspection of military recruits.<sup>50</sup> It is here that cases of gynaecomastia were often found. Sometimes, gynaecomastia occurred in subjects who were more 'effeminate' but this was not always so. Pulido discussed some cases of exemption from military service as a result of gynaecomastia.<sup>51</sup> In the first of these, 'sus pechos parecíanse á los de la mujer, su cuerpo tenía formas redondeadas, abundaba en grasa, y presentaba los genitales bien desarrollados'. The second recruit to be examined was 'fornido, bien desarrollado, cuyos pechos competían con los de una mujer, pero tan abultados, que por imposibilidad de usar el equipo militar fué declarado exento'. In this case, the 'conformacion genital era excelente'. In both cases, there was no lactation. In all other cases observed, virile traits were complete and normal.<sup>52</sup> There was, it was argued, often a difference between the male breasts of this enlarged size and those of females. Enlarged male breasts simply may have contained more fat and the actual mammary gland was much smaller in men than in women, although in some they were identical to those of women.

That this phenomenon was seen as unusual in men was also articulated by means of referral to a developmental analysis of breasts in humans. As Maraón would argue decades later, Pulido believed that large male breasts were common in early stages of human development, when young boys had not yet reached maturity and sexual differentiation was not complete: 'Pero si esta analogía [...] sólo aparece como un hecho raro cuando la organizacion humana ha llegado al completo de su desarrollo, en cambio es perfectamente normal ó fisiológica en los albores de la vida, cuando los sexos aún no se han trazado sus finales destinos genésicos; hablamos de la primera infancia'.<sup>53</sup> In evolutionary terms elaborated later on by other specialists, the ontology of

49 Pulido, 'Lactancia paterna', *RMCP*, VI, 365.

50 This is discussed more fully, with particular reference to hermaphroditism, in Richard Cleminson and Francisco Vázquez García, 'The Hermaphrodite, Fecundity and Military Efficiency: Dangerous Subjects in the Emerging Liberal Order of Nineteenth-century Spain', in *Sexual Histories of the Body*, ed. Sarah Toulalan and Kate Fisher (Manchester: Manchester U. P., forthcoming).

51 Pulido, 'Lactancia paterna', *RMCP*, VI, 367–68.

52 All references from Pulido, 'Lactancia paterna', *RMCP*, VI, 367–68.

53 Pulido, 'Lactancia paterna', *RMCP*, VI, 372. See also Pulido, 'Lactancia paterna', *RMCP*, VI, 473–76. This lactation common in childhood continued in women. Women were seen as a continuation of children, as Maraón in due course would argue. Men developed fullness after the childhood phase.

the individual would replicate or recapitulate the phylogeny of the species in a developmental and chronological pattern.

For Pulido gynaecomastia and possible lactation was therefore not unusual in men. They were not necessarily signs of effeminacy or lack of correct male genital development but they could sometimes be signs of pathology or ‘monstrosity’. While the presence of similar characteristics in both men and women was posited these had their limitations—they were often understood as to *appear* to be breasts or to *appear* to produce a milk-like substance, as we have stated.<sup>54</sup> Most cases derived their gynaecomastia and lactation from glandular causes or build up of fat (described as ‘naturaleza lipomatosa’).<sup>55</sup> Furthermore, in most cases there was no ‘perversion of virility’ and no effect on sexual functioning. Where, however, gynaecomastia was accompanied by lack of genital development, complete effeminacy was present but not necessarily the even more serious ‘sexual degeneracy’. In the case of ‘pederasts’, it could not be said that their ‘effeminacy’ was always accompanied by gynaecomastia.<sup>56</sup>

The relationship between chronology, development, hormonal aetiologies, effeminacy and ‘pederasty’ (homosexuality) would be examined in detail by Marañón in the 1920s and 1930s.<sup>57</sup> In Marañón’s thought the sexes were not seen as essentially different but were inserted in a schema of chronological and evolutionary development that placed children and women on an inferior plane developmentally.<sup>58</sup> As in Aristotelian, Galenic and Hippocratic models, maleness was understood by Marañón as the perfection of human kind, something that women could never achieve. However, in some individuals the process of sexual chronology and differentiation was confused, retarded

54 See Pulido, ‘Lactancia paterna’, *RMCP*, VI, 535. It was possible that the substance secreted was not milk and breasts could be monstrous and effeminate: it was necessary to remember that ‘la ginecomastia no denota más que una monstruosidad de bulto, una aberración de dimensiones, chocante á la inspección visual, y que no tiene necesidad alguna de alcanzar la glándula mamaria’; ‘pechos monstruosos y afeminados’ are also mentioned.

55 See the table of fifty-nine cases reproduced in Pulido, ‘Lactancia paterna’, *RMCP*, VI, 14–16.

56 Pulido, ‘Lactancia paterna’, *RMCP*, VI, 18–19.

57 Gregorio Marañón, ‘Nuevas ideas sobre el problema de la intersexualidad y sobre la cronología de los sexos’ (original 1928), in *Obras completas*, ed. Alfredo Juderías, 10 vols (Madrid: Espasa-Calpe, 1966–1977), IV (1968), 165–83; *La evolución de la sexualidad y los estados intersexuales* (original 1930) in *Obras completas*, VIII, *Ensayos* (1972), 499–710. For an analysis of the principal tenets of Marañón’s theories, see Cleminson and Vázquez, ‘*Los Invisibles*’, 98–114; T. F. Glick, ‘Marañón, Intersexuality and the Biological Construction of Gender in 1920s Spain’, *Cronos*, 8 (2005), 121–37; Sarah Wright, ‘Gregorio Marañón and “The Cult of Sex”: Effeminacy and Intersexuality in “The Psychopathology of Don Juan” (1924)’, *BSS*, LXXXI (2004), 717–38.

58 Glick understands this interpretation as part of Marañón’s drawing on Darwin. See Glick, ‘Marañón, Intersexuality and the Biological Construction of Gender in 1920s Spain’, 122–24.

or pathologically determined. In part, this drew on his notion that the 'germs' of one sex, because of the initial bisexuality of the embryo, always remained, to a greater or lesser degree, in the body of the other sex. There ensued a constant battle to repress the other sex throughout one's life. In general, women would 'mature' towards masculinity and males would degenerate towards femininity as the years rolled on. Some individuals remained stuck on the developmental plain as 'intersexuals' or acquired the characteristics of the other sex as they got older.<sup>59</sup> We now examine what such a theory had to say about gynaecomastia.

Marañón asserted that, despite the initial bisexuality of the embryo, certain defined characteristics of each sex were predominant. He subscribed to a classic division between primary and secondary characteristics as suggested by Havelock Ellis and further divided these between anatomical and functional elements.<sup>60</sup> In the eleventh chapter of his book he discussed gynaecomastia. For Marañón, the very existence of gynaecomastia, unaccompanied by other traits from the other sex, signified in itself an intersexual state. Marañón directed the reader to the work of Ángel Pulido for a discussion of case histories and focused instead on a study of the phenomenon from an anatomical, hormonal and intersexual perspective. Gynaecomastia occurred in the following scenarios: mammary hypertrophy and mastitis in recently born male babies, which generally passed swiftly; transitory pubertal gynaecomastia as a result of pubertal intersexuality, also generally short-lived with no effect on the psychology and libido; a permanent state, indicative of male pseudo-hermaphroditism; and late gynaecomastia in youth or adulthood, as a result of suction of the teat, with occasional lactation. In these cases, sexual 'anomalies' were present such as small testicles or effeminacy. There was also gynaecomastia in castrates and as a result of a combination of spontaneous hormonal imbalances. Finally, there was the possibility of unilateral gynaecomastia in 'hemi-sexual' individuals, that is, those who displayed the sexual characteristics of the other sex on one side of their body.<sup>61</sup>

This taxonomic paraphernalia was characteristic of Marañón and other scientists of sexuality who, as their case studies refused to obey existing criteria, expanded their classificatory systems, which were increasingly

59 Marañón wrote of the 'superación' of the feminine by the masculine in Marañón, 'Nuevas ideas sobre el problema de la intersexualidad', 180–81. What happened, then, is that '*Los dos sexos no se oponen ... sino que, sencillamente, se suceden*' (182; original emphasis).

60 Marañón, *La evolución de la sexualidad*, 513, in tabular form. The notion of primary and secondary characters was invented by John Hunter (1870) according to Aresti, *Médicos*, 121. See also C. Barker Jorgensen, *John Hunter, A. A. Berthold and the Origins of Endocrinology* (Odense: Odense U. P., 1971).

61 Marañón, *La evolución de la sexualidad*, 590–93.

incapable of holding water.<sup>62</sup> For Marañón, any development of breasts in males was due to the action of the glands of internal secretion and their transposition from one sex to the other. The development of the lactating breast depended ‘strictly’ upon the action of ovarian secretion; this was why breasts were habitually present in females and not in males. The existence of the ovarian hormone in males, however, was responsible for ‘su aparición experimental, constante, en el macho feminizado, y su constante atrofia en la hembra masculinizada’.<sup>63</sup> Following on from this schema, if feminizing characters were revived, ‘como pasa en los estados hermafroditicos y pseudo-hermafroditicos permanentes o en las intersexualidades puberales’ the hypertrophy of the mammary gland occurs.<sup>64</sup> This was not always the case, however. In cases of acromegaly (excessive growth due to a surplus of the hormone produced by the pituitary gland), there may be a congenital predisposition in the mammary tissue.<sup>65</sup> Finally, Marañón noted a peculiar characteristic of the mammary: despite it being a typical female organ, it showed ‘una especial facilidad para evolucionar ante una excitación hormonal cualquiera, aun no siendo específica; y ante estímulos mecánicos, como el de la succión prolongada’.<sup>66</sup>

For Marañón, gynaecomastia was an ‘aberration’, the result of a hormonal imbalance and was understood as the mixing of the sexes within a framework that posited this as ‘natural’ given the potential ‘intersexuality’ of all individuals. As such, it was a more subtle analysis with multiple variables than that of Pulido. But Marañón’s schema still conforms to the idea of their being two sexes and sex-specific characters, despite the somewhat precariousness of his framework. This less rigid two-sex model was based on a notion of developmental evolution in which the virile male was seen to be the perfect exponent of the human species.<sup>67</sup>

### Hair, Adolescence and Intersexuality

In his study of the Renaissance beard, Will Fisher remarks that Thomas Laqueur does not even mention facial hair in his account of the construction of sexual difference from the eighteenth century onwards. The focus on the

62 For just one example, see the multiple category of ‘sexual invert’ according to gender and sexual deviance and ‘active’ and ‘passive’ predilections as advanced by C. Bernaldo de Quirós and J. M. Llanas Aguilaniedo, *La mala vida en Madrid. Estudio psicosociológico con dibujos y fotografías del natural* (Madrid: B. Rodríguez Sierra, 1901), 259–62.

63 Marañón, *La evolución de la sexualidad*, 594.

64 Marañón, *La evolución de la sexualidad*, 594.

65 Marañón, *La evolución de la sexualidad*, 595.

66 Marañón, *La evolución de la sexualidad*, 595 (original emphasis).

67 Marañón also believed that gynaecomastia, as a phenomenon related to lower developmental levels, was present in 36% of adolescents. See Gregorio Marañón, ‘Los estados intersexuales en la pubertad’, *Obras completas*, III (1967), 511–23. This was the text of a conference given in Paris in 1937.

genitals by Laqueur assumes, Fisher holds, that what made sex was historically constant despite there being different elements in its composition. As Fisher states: 'In choosing to single out the genitals as *the* indicator of sex, Laqueur fails to allow for the importance of other gendered parts, and as a result, fails to allow for the possibility of historical changes in the meaning of the term "sex"'.<sup>68</sup> Sex is thus reduced, according to the same author, to genital morphology. But other bodily elements enabled distinctions between the sexes, at least in terms of social role. For Fisher, the beard made the man, differentiated the man from the boy and differentiated men from women. Further, the beard, and by extension, hair needed to be constantly reaffirmed as an attribute. It needed, following the analysis provided by Judith Butler, to be made to matter and made to be matter.<sup>69</sup> Men were distinguished from 'not-men' and partial or incomplete men such as *castrati*.<sup>70</sup> For another historian, this simultaneous historicization of sexual differences produced and consolidated heterosexual desire.<sup>71</sup> What resulted was an 'enduring synchronic diversity in representations of bodies'.<sup>72</sup>

Gregorio Marañón also focused on hair of all types as a means of differentiating the categories of man, boy and woman and, in doing so, reaffirmed the 'logic' and naturalness of heterosexuality and the 'confused' status of homosexuality.<sup>73</sup> Marañón set out to locate and document minute details of sexual difference between men and women in his *La evolución de la sexualidad* (1930) and some of these differences included the extent and position of hair on the body. For Marañón, women's secondary anatomical characteristics included a 'sistema piloso infantil y cabello largo y persistente' while the male sported a 'sistema piloso desarrollado y cabello corto y caduco'.<sup>74</sup> Such a distinction referred, once more, to the notion of woman as less developed and closer to childhood than to the adult male. Three principal differences marked men from women in terms of hair: length, life span ('caducidad') and 'modo de implantación'. While the majority of authors,

68 Fisher, 'The Renaissance Beard', 156 (original emphasis).

69 Fisher, 'The Renaissance Beard', 155–56.

70 Edward Behrend-Martínez, in 'Manhood and the Neutered Body in Early Modern Spain', *Journal of Social History*, 38 (2005), 1073–93, writes 'Castrati had the reputation for frivolity, vanity, enjoying perfumes, using make-up, emotionality, instability, and immoderation. Their castrated bodies were described as corpulent, lanky, soft, and hairless' (1075). See also Harvey, 'The Substance of Sexual Difference', 215, where the author cites Londa Schiebinger, *Nature's Body: Sexual Politics and the Making of Modern Science* (London: HarperCollins, 1993), 120, to this effect.

71 Harvey, 'The Substance of Sexual Difference', 217.

72 Harvey, 'The Substance of Sexual Difference', 219.

73 For Marañón, in all homosexuals there was 'una base orgánica de intersexualidad'. See Gregorio Marañón, 'Mi concepto biológico de la homosexualidad' (1936) (prologue to Leonidio Ribeiro, *Homosexualidad y Endocrinología* [1938]), in *Obras completas*, I (1966), 169–78 (p. 170).

74 Marañón, *La evolución de la sexualidad*, 513.



according to Marañón, believed that type, structure and longevity of hair was established from birth, he believed in accordance with a developmental model that it was significant in terms of sexual dimorphism. Amongst these differences, children, like women, would have longer hair and while some believed that if men left their hair to grow it would develop the same length and characteristics as women this was in fact incorrect. In those cases of Spanish men and those of other races that had let their hair grow ‘se ha comprobado hasta la saciedad la limitación en el crecimiento de la melena viril’.<sup>75</sup> Not only was the same hair structure likely, it was also monstrous: ‘Los casos de hombres de cabellera comparable a la de las mujeres, deben considerarse como monstruosos’.<sup>76</sup> The hair of men and women also had a sexual function; it was to ensure erotic attraction: ‘Precisamente en los caracteres tricósicos (...) se da claramente el fenómeno de que el *instinto señala con precisión los rasgos que son propios a cada sexo, al convertirlos en centro de la atracción erótica*’.<sup>77</sup> The assumptions on the basis of sexual orientation, gender and racial characteristics remain clear in other observations by Marañón such as ‘La cabellera larga ha sido siempre [...] uno de los rasgos específicos de la atracción sexual de la mujer. Hay muchas historias de mujeres [...] que se hicieron famosas por sus espléndidas trenzas; en las cuales [...] se encendió la pasión de muchos hombres’.<sup>78</sup>

Hair on other parts of the body was also imbued with sexual and gendered meaning. For example, in contrast to some authors, Marañón argued that the female beard was not completely different from the male; instead, it was different from the *mature* male’s beard but not the adolescent’s. Once more, the woman was theorized as a less developed form of man.<sup>79</sup> Pubic hair was also theorized by Marañón as being radically different from one sex to another. In females, the pubic hair was like that of adolescents of both sexes. In men, during puberty, the pubic hair was also ‘feminoid’. In older women, during the climacteric, virilization of pubic hair

75 Marañón, *La evolución de la sexualidad*, 523–24.

76 Marañón, *La evolución de la sexualidad*, 524. Bearded women and excessive hair growth were understood as marvellous or ‘monstrous’ in the medieval and early modern period. See Ballesteros, *Monstruos*, 313–40; Lorraine Daston and Katherine Park, *Wonders and the Order of Nature, 1150–1750* (New York: Zone Books, 1998), 192.

77 Marañón, *La evolución de la sexualidad*, 524.

78 Marañón, *La evolución de la sexualidad*, 524. Marañón did acknowledge that fashions had changed and now short hair was more common in women. But this ‘sexual mutilation’ would probably be short-lived. In women it responded to a desire to bring them closer to infancy rather than to virility (525). The role of long hair in affording gender confusion to indigenous peoples in America can be seen in Columbus’ son Ferdinand’s comments on the natives’ habit of tying their hair back ‘like that of women in Castile’ (*The Four Voyages of Christopher Columbus*, ed. J. M. Cohen [Harmondsworth: Penguin, 1969], 98–99).

79 Marañón, *La evolución de la sexualidad*, 530.

occurred. As well as women being placed on the chronological and developmental axis at the same point as young or undeveloped men, male homosexuals, as 'non-men' or intersexuals, were deemed in most cases to display feminoid patterns: 'El sistema piloso afecta la disposición feminoide en el 75 por 100 de los hombres homosexuales examinados por mí (escasez o ausencia de vello en el tronco y piernas, barba escasa, implantación feminoide del cabello en la frente y en la nuca, retardo excesivo en el brote del vello, etc. Mi experiencia es concluyente en este punto concreto)'.<sup>80</sup>

### Hormonal Differences: 'Male' and 'Female' Hormones

The third set of biological resources we draw on to illustrate the articulation of sex differences in late nineteenth- and early twentieth-century Spain comprises the hormones. As controversies in this period raged over the degree to which specific positive and negative characteristics in human beings were understood to be congenital and others acquired, an analogous process of discerning the essential components of masculinity and femininity was also hotly debated. A history of hormones shows how these two sets of concerns crossed over and, more importantly in the context of this article, shows how femininity and masculinity were understood by scientists as, firstly, governed by internal processes (the 'internal secretions') that were specific to each sex, and, secondly, how this model declined as those hormones previously thought to be specific to one sex were actually found in the other. The history of hormones illustrates, in a word, how biological essentialism caved in to a model where each hormone obtained *relative* importance and where the non-fixity of the sexes was posited. In studying this process we can see how notions of gender and sex were contained in biological assumptions and how, ultimately, they overflowed them.

---

80 Marañón, *La evolución de la sexualidad*, 612. In addition to differences in hair, female homosexuals were held to have different spacing in their teeth, male homosexuals' voices were different from those of other men and their skin was more delicate and feminine. Their skin was also, following Hirschfeld's observations, warmer than heterosexual men's (612). Gynaecomastia, however, had not particularly been found in male homosexuals in Marañón's experience (613). Many other observations and some identical ones are contained in Marañón's previous 'Sobre el significado sexual del cabello' (1928), in *Obras completas*, IV (1968), 149–64. Of related interest from Marañón's *Vida e historia* (2<sup>nd</sup> ed. 1940) are 'Sentido jerárquico del sombrero' and 'Sentido sexual del sombrero', in *Obras completas*, IX (1973), 185–86 and 186–87. Glick, 'Marañón, Intersexuality and the Biological Construction of Gender in 1920s Spain', holds that Marañón broke with biological determinism and promoted acceptance of inversion: 'He notably widened the bounds of the "normal" and shrank the range of the "perversions"' (135). Our interpretation is that, while certainly Marañón was 'progressive' in the sense that he opposed social and legal sanction against, for example, homosexuals, his theories widened the bounds of the 'normal' but at the same time extended the range of the pathological to cover many more expressions of sexuality. At the end of the day, intersexuality in all its forms was to be fought against and removed as far as possible.

Nelly Oudshoorn writes that ‘Early in the twentieth century, the “essence” of femininity came to be located not in an organ but in chemical substances: sex hormones. The new field of sex endocrinology introduced the concept of “female” and “male” sex hormones as chemical messengers of femininity and masculinity. This hormonally constructed concept of the body has developed into one of the dominant modes of thinking about the biological roots of sex differences.’<sup>81</sup> The hormonal explanation for femaleness supplanted the nineteenth-century notion of the essence of women being located in the womb and in the ovaries. Sex endocrinology was dominated in the early twentieth century by two approaches: the biological and the chemical. Up to the 1920s the biological model prevailed whereby the ovaries were thought of in terms of regulation of the nervous system. In the 1920s gynaecology first introduced the idea that the ovaries secreted chemicals. Physiologists began to use the concept.<sup>82</sup> In the 1910s physiologists believed that the embryo was affected by environmental and physiological conditions whereas geneticists favoured the action of the chromosomes as broadly independent of circumstantial conditions. Sex endocrinologists believed that hormones provided the missing link between the two spheres of action. Sex determination may take place by means of the chromosomes in accordance with Mendelian inheritance but sex differentiation took place in response to hormonal action.<sup>83</sup>

Instead of the gonads being the agents of sex differentiation, then, the hormones were understood as the chemical ‘messengers’ of maleness and femaleness. Scientists designated hormones as sex-specific in origin and function in the period 1905–1920, that is, there were understood to be ‘male’ sex hormones and ‘female’ sex hormones which would make the embryo and the growing human being into a clear male or female.<sup>84</sup> These hormones would govern all aspects of human development and existence according to the most enthusiastic of their proponents. Indeed, the future Regius

81 Oudshoorn, *Beyond the Natural Body*, 8. For a general overview of the rise of hormonal, or endocrinological theories, see Diana Long Hall and Thomas F. Glick, ‘Endocrinology: A Brief Introduction’, *Journal of the History of Biology*, 9 (1976), 229–33. On Spain, see Thomas F. Glick, ‘On the Diffusion of a New Specialty: Marañón and the “Crisis” of Endocrinology in Spain’, *Journal of the History of Biology*, 9 (1976), 287–300.

82 Oudshoorn, *Beyond the Natural Body*, 15–16; 19–20.

83 Oudshoorn, *Beyond the Natural Body*, 21. Oudshoorn, ‘Endocrinologists’, 176, discussing developments in the late 1930s, remarks that even though the idea of sex chromosomes being agents of sex determination had been proposed in 1906, techniques for detecting them were not yet available: ‘In this context it can be understood that the expectations were high that sex hormones would provide scientists with a tool to determine the sex of hermaphrodites and to explain the “feminine” character of homosexual men’. As seen below, Marañón embraced this possibility.

84 Oudshoorn, *Beyond the Natural Body*, 22.

professor of Medicine at Oxford, Walter Langdon-Brown, would declare in 1923 that we 'are marionettes of our glands'.<sup>85</sup>

The term 'hormone' was a result of the reformulation of the doctrine of 'internal secretions' by the British physiologist Ernest H. Starling. Starling, revising the theory of internal secretions established by C. E. Brown-Séquard (1817–1894) and his assistant Arsène d'Arsonval (1851–1940),<sup>86</sup> argued in 1905 that the 'chemical messengers or "hormones" as we may call them, have to be carried from the organ where they are produced to the organ which they affect, by means of the blood'.<sup>87</sup> From the start, this was very much a theory associated with the processes of sexuality and in particular with the loss of semen. In the early 1890s, Brown-Séquard produced testicular and other extracts, which could be used as a means of curing diseases whose aetiology was unknown but whose pathology was associated with a particular tissue of organ,<sup>88</sup> having first suggested in 1889 that the 'male gonads produced a secretion that controlled the development of the male organism, whereas the ovaries secreted substances regulating the development of the female organism'.<sup>89</sup> Subsequently, a distinction was made between the hormone, a chemical derived from animal tissues, which had specific physiological effects and an internal secretion, an entity whose absence resulted in disease, a hypothetical entity. Hormones could be isolated in the laboratory; internal secretions were implied by clinical observations.<sup>90</sup> In practice in Spain, the terms 'glandular secretions', 'internal secretions' and 'hormones' tended to be used interchangeably.

It was not long before this system of thought underwent periodic crises. In 1922, Spain's leading endocrinologist Marañón summarized the current state of the 'doctrine of internal secretions' on an international level and it is here that we see the relationship between sexual differentiation and the sex-specific action of the hormones made explicit.<sup>91</sup> In this account he discussed the slow up-take of the hormonal doctrine, which, by the time of writing, had reached a 'hyperbolic' period in which the idea became broadly disseminated

85 Quoted in Diana Long Hall, 'The Critic and the Advocate: Contrasting British Views on the State of Endocrinology in the Early 1920s', *Journal of the History of Biology*, 9 (1976), 269–85 (p. 273).

86 On this process see Merriley Borell, 'Organotherapy, British Physiology, and Discovery of the Internal Secretions', *Journal of the History of Biology*, 9 (1976), 235–68; 'Organotherapy and the Emergence of Reproductive Endocrinology', *Journal of the History of Biology*, 18 (1985), 1–30 (p. 3).

87 Quoted in Nelly Oudshoorn, 'Endocrinologists and the Conceptualization of Sex, 1920–1940', *Journal of the History of Biology*, 23 (1990), 163–86 (p. 166).

88 Borell, 'Organotherapy, British Physiology', 266.

89 Oudshoorn, 'Endocrinologists', 165.

90 Borell, 'Organotherapy and the Emergence', 5.

91 Gregorio Marañón, 'Estado actual de la doctrina de las secreciones internas', in *Obras completas*, II (1966), 9–89. This material formed Marañón's acceptance speech into the Royal National Academy of Medicine in March 1922.

and during which ‘los conceptos nuevos se esparcen y divulgan excesivamente, y [...] pierden la primitiva compostura y seriedad científica, convirtiéndose en fácil comodín que a todo se aplica, y con el que se trata de explicarlo todo’.<sup>92</sup> This was followed by a reverse process, a questioning of some of the more extravagant claims and a ‘crisis’. This crisis, as Glick has pointed out, was engendered by the American E. Gley’s reining in of some of these excesses, which were discussed in his four lessons on endocrinology in 1919 at the Societat de Biologia (Barcelona).<sup>93</sup> After this period of crisis, endocrinology entered into its ‘classical’ or mature phase, when violent attitudes were no longer admitted.<sup>94</sup>

In a section of his Royal Academy of Medicine acceptance speech Marañón outlined the physiological role of the internal secretions. This was sub-divided into five main areas: intra- and extra-uterine growth; the regulation of the nutritional metabolism; the ‘genital function’; the connection between the nervous and endocrine systems, and, the defence of the organism against toxins and attacks.<sup>95</sup> Here, we will focus on the question of the genital functions. For Marañón, before endocrinological accounts, the pathology of the sexual functions was the subject of explanations of little more than ‘literary value’. The doctrine of internal secretions had changed all this: ‘Hoy, en cambio, podemos abarcar casi la totalidad del aspecto fisiológico y patológico del problema sexual, y en muchos puntos con detalles de la mayor precisión’.<sup>96</sup> Sexual functions could be broken down into two main areas, the somatic and the functional, as we have seen in Marañón’s explanations of intersexuality, above. The somatic aspect accounted for the development and morphology of the primary and secondary sexual characters.

The functional aspect was also divided into primary and secondary functions. The primary ones referred to the ‘sexual impulse’ and the ability to reproduce, in both sexes and menstruation, pregnancy, birth and lactation in women. The secondary functions included those aspects that were different

92 Marañón, ‘Estado actual de la doctrina’, 15.

93 See Glick, ‘On the Diffusion of a New Specialty’, 290. Gley’s talks were published as *Quatre leçons sur les sécrétions internes* (Paris, 1920). Gley’s criticism also turned on Marañón for his ‘uncritical’ use of organic extracts in the clinic. Marañón defended himself from Gley by alleging the latter’s ‘lack of perfect comprehension of the [original] Spanish text’ of Marañón’s *Las glándulas de secreción interna y las enfermedades de la nutrición* (the second edition was published 1916), as mentioned in Marañón, ‘Estado actual de la doctrina’, 15–16; 26, n. 1. Hall traces this emerging crisis to two articles published in 1923, one by Starling giving an up-beat account of the discipline and the other by Vincent Swale who spoke of a crisis in endocrinology that ‘threatened its existence as a respectable medical and scientific specialty’ (Hall, ‘The Critic and the Advocate’, 269). By 1937 the *British Medical Journal* had noted that indiscriminate endocrinology had brought about an inevitable reaction and the field had fallen into disfavour (285).

94 Marañón, ‘Estado actual de la doctrina’, 89.

95 Marañón, ‘Estado actual de la doctrina’, 29–60.

96 Marañón, ‘Estado actual de la doctrina’, 41.

in the sexes, that is, physical aptitude, the predominance of sentiment or intellect in psychological activity, and the predominance of the maternal instinct or the instinct in general in social life. For Marañón, these aspects were clearly delimited between the sexes: 'todo este gran conjunto de peculiaridades funcionales y somáticas que separan a un sexo de otro, está bajo la inmediata dependencia de las secreciones internas de la glándula genital respectiva en primer plano'.<sup>97</sup> At the time, Marañón argued, it was admitted by nearly all observers that the fertilized egg was bisexual in nature (i.e. contained the two sexes) and that sex determination, despite this initial hermaphroditism, in either a male or in a female sense depended on the action of the hormones, generally from the testes and the ovaries. However, in each body there remained vestiges of the other sex: 'los caracteres del sexo contrario [...] amortiguados, latentes, hasta edad bien avanzada de la vida, pudiendo, ya espontáneamente, ya en condiciones experimentales, revivir y determinar una inversión sexual más o menos acentuada'.<sup>98</sup>

What means did Marañón advocate to prevent this slide into sexual ambiguity? In order to prevent the dangers of infantile and adolescent intersexuality, that is, virilism in girls and, more commonly, effeminacy in boys, a pedagogical programme was called for. The route this should take was clear: '*no hay otra educación que la diferenciación sexual*'.<sup>99</sup> Sexual ambiguity was, as Marañón had said, part and parcel of the human legacy. But sexual differentiation increased as people got older and as humans became more 'civilized'—'*la diferenciación es tanto más neta cuanto más nos apartamos de las razas bárbaras y nos acercamos a las más selectas*'.<sup>100</sup> Even in civilized stages, however, the 'espinas de la intersexualidad' remained in humanity's side. It was necessary, therefore, to 'extinguir los restos heterosexuales, ayudar a la naturaleza en su tarea de destruir la intersexualidad'.<sup>101</sup> How would this be achieved, given the fact that intersexuality was based in an organic state? Any child, with manifestations of intersexuality, 'por leves que sean', should be submitted to 'un tratamiento farmacológico opoterápico apropiado'.<sup>102</sup> Such chemical treatment, however, would be secondary to more general and psychological

97 Marañón, 'Estado actual de la doctrina', 42.

98 Marañón, 'Estado actual de la doctrina', 43.

99 Gregorio Marañón, 'Los estados intersexuales en la especie humana' (1927), in *Obras completas*, III, *Conferencias* (1967), 155–85 (p. 175; emphasis in original).

100 Marañón, 'Los estados', 175.

101 Marañón, 'Los estados', 175.

102 Marañón, 'Los estados', 175.

methods, ‘dirigiendo con una disciplina severa los instintos ya torcidos hacia su meta normal’.<sup>103</sup>

Marañón’s account of the doctrine of the internal secretions in the mid-1920s, however, did not take into account a discovery which would rock the basis of thought on the subject in that decade. One historian writes: ‘In the early 1920s the dualistic idea of maleness and femaleness as clearly defined hormonal states became a topic of debate in the scientific community’.<sup>104</sup> If certain hormones produced in the male body were supposed to create and maintain maleness and different hormones in the female body femaleness, in 1921 the first challenge to the sex-specific nature of sex hormones arrived when the Viennese gynaecologist Ofried Fellner published an article on the growth of the uterus in female rabbits after treatment with extracts of the testes. Later, in 1927, Dutch biochemists announced that they had found the female hormone not only in the testes but also in the urine of ‘normal’ men.<sup>105</sup> This find was confirmed in 1934 when Bernhard Zondek published a piece on the ‘Mass Excretion of Oestrogenic [“female”] Hormone in the Urine of the Stallion’ in *Nature*.<sup>106</sup> What was to be done in the light of these discoveries, which rejected the idea of sex-specific hormones? Oudshoorn writes:

What label should be attached to substances isolated from male organisms possessing properties classified as being specific to female sex hormones? Scientists decided to name these substances female sex hormones, thus abandoning the criterion of exclusively sex-specific origin. Female sex hormones were no longer conceptualized as restricted to female organisms, and male sex hormones were no longer thought to be present only in males.<sup>107</sup>

103 Marañón, ‘Los estados’, 176. Marañón also elaborated on these rather more social methods in ‘La educación sexual y la diferenciación sexual’, *Generación Consciente*, 31 (1926), 15–18, and, ‘La educación sexual y la diferenciación sexual’, *Generación Consciente*, 32 (1926), 42–45. The question was discussed throughout Marañón’s 1930 *La evolución* and especially in the last chapter of this book, ‘¿Es posible favorecer el auge de la diferenciación sexual?’, 699–710.

104 Oudshoorn, ‘Endocrinologists’, 169.

105 Oudshoorn, ‘Endocrinologists’, 169–70.

106 Oudshoorn, ‘Endocrinologists’, 170. Zondek argued that the finding of this female hormone in male urine constituted a ‘paradox’ whereby ‘the male sex is recognized by a high oestrogenic hormone content’ (170). Clearly, it was only a paradox because of the dualistic mind-set on specific sexual traits in one sex and the other. On the basis of this, some clinicians argued that those human subjects where the ‘wrong’ hormone was found were latent hermaphrodites (Oudshoorn, *Beyond the Natural Body*, 27) and many saw the presence of the female hormone in the male body as an agent of disease and disorder, in particular ‘psychosexual disorders’ such as homosexuality (32).

107 Oudshoorn, ‘Endocrinologists’, 171.

This worrying development was, however, eventually acknowledged by Marañón. Marañón referred his colleagues to Robert Frank, who had found ovarian follicular hormone, the female hormone, in the blood and urine of stallions.<sup>108</sup> The full implication of these findings would take some years to have an impact. Doubts began to emerge in 1931 whereby the seemingly confident assertions on the action of the endocrine glands in the development of sex as depicted in his *Evolución de los estados intersexuales* were not mirrored in his clinical approach. In fact, while he may have discussed with a high degree of certainty virilisation in women, together with its hormonal treatment,<sup>109</sup> a discussion on 'histological intersexuality' and 'chemical intersexuality' in the same year appears to be placed on the cusp of two explanatory paradigms, beset with a number of doubts.<sup>110</sup> Marañón discussed the gonadal explanation of intersexuality within his framework of the existence of the two glands and the atrophy of one of them in cases of hermaphroditism. Such was also the case in examples of late virilism in women and had been proved histologically. Recently, Marañón noted, histological criteria had been replaced by chemical ones in order to determine intersexuality. A possible cause of error in diagnosis was that gonadal tissue was able to secrete substances of the other sex, a phenomenon proven by Lipschütz. In his own research, Marañón had attempted to find the female hormone in thirteen cases of intersexual men. This sample was composed of 'tres homosexuales sin el menor carácter de intersexualidad; en uno fué positiva la hormona femenina—foliculina—en sangre y orina, siendo positiva; en el restante fué negativa su presencia en orina y sangre'.<sup>111</sup>

Despite this rather poor set of results, Marañón could optimistically record that in the majority of cases of such men reports had been positive for the presence of the female hormone, thus proving his intersexual thesis. It could be objected, Marañón conceded, that the mere presence of the female hormone in the blood and urine of the male proved little biologically given that it was now acknowledged that the presence of female follicular hormone was not exclusively linked to the presence of the female gonad. Despite having explained such a presence on the basis of Frank's theories earlier, now 'Es éste hoy por hoy un problema turbador del que todavía no pueden

108 See the discussion in Marañón, *La evolución*, 568. Oudshoorn, 'Endocrinologists', 172–73, notes that Robert T. Frank who wrote *The Female Sex Hormone* (Springfield/Baltimore, 1929) had found the female sex hormones in 'normal' 'healthy' males but that these originated from food products. She argues that Frank was one example of a scientist who 'tried hard to maintain a dualistic conceptualization of sex, according to which male and female were defined as exclusive categories' (172).

109 See, for example, 'Virilismo postgravídico', *El Siglo Médico*, 88 (1931), 507–08.

110 Gregorio Marañón, 'Intersexualidad histológica e intersexualidad química', *El Siglo Médico*, 4069, 5/12/31, discussed on 28 November 1931 at the National Academy of Medicine. An article of the same name but different text (and less equivocal) is reproduced in *Obras completas*, III, 225–28. This article was published in the annals of the Academy in 1931.

111 Marañón, 'Intersexualidad histológica', 588.



emitirse afirmaciones concretas'. Whatever the origin of the female hormone, however, in an attempt to shore up an increasingly shaky theory, Marañón affirmed that 'en el hombre con caracteres morfológicos intersexuales, lo cierto es que la foliculina se encuentra con más frecuencia en sangre u orina que en el hombre sexualmente normal'.<sup>112</sup> The one-time extreme confidence in the explanatory frameworks of hormones with respect to sex differences and other matters was, by 1936, thoroughly questioned.

In Marañón's prologue to criminologist Quintiliana Saldaña's book *Nueva criminología* these misgivings became evident in print. While previously 'Con las hormonas y sus interrelaciones se ha explicado todo, hasta lo inexplicable', this was now tempered by Marañón's present conception of the 'endocrinological doctrine' that was 'un tanto escueta, hipercrítica y, si se quiere, ruda'. Instead of hormones being 'duendes traviesos ni hadas milagrosas', their sphere of action became much more limited. They were now 'obreras estrictas'.<sup>113</sup>

In the same way as other observers in other countries in the 1920s had reassessed the ability of the hormones to explain all character traits Marañón revised his own perspective, writing: 'Y hoy la verdad sobre las secreciones internas es mucho más limpia y clara, pero más limitada y escueta que lo que hace unos cuantos años nos parecía [...] La doctrina de las secreciones internas nos ha revelado un factor de la personalidad humana; pero nada más que un factor'.<sup>114</sup> In 1937 this radical doubt was consolidated further: 'La foliculina, la hormona femenina, se encuentra en el testículo, y probablemente se elabora en él en cantidades mucho mayores que en el ovario; y la hormona masculina se encuentra constantemente en la hembra'.<sup>115</sup> The age of sex differences as engendered by the action of the internal secretions appeared to be over.

## Conclusion

The three scenarios discussed here—breasts, hair and hormones—show the 'constructedness' of biological concepts of gender and sex differences in that the three sets of accounts start from clear essentialized understandings of the attributes of the sexes, discuss abnormal or pathological exceptions and finally see their frameworks over-flowed with rebellious sex-traits that would not limit themselves to one type of body. While sex/gender traits were constantly reiterated as a default mechanism, the shift from the external or 'surface' account to the inner workings of the body effectively disarticulated

112 Marañón, 'Intersexualidad histológica', 588.

113 All quotations in this paragraph from Gregorio Marañón, 'La endocrinología y la ciencia penal', prologue to Q. Saldaña, *Nueva criminología* (1936), in *Obras completas*, I (1966), 569–75 (p. 569).

114 Marañón, 'La endocrinología y la ciencia penal', 570.

115 Marañón, 'Los estados intersexuales en la pubertad', 518.

essentialized notions. As the body, sex and gender failed to comply with ever more complex taxonomies it was their excessiveness to these paradigms that converted them into ‘duendes traviesos’ themselves, supplanting the secure sexually differentiated place that breasts, hair and hormones had once occupied.